



The technical and economic hurdles of CCUS

Sentiment	Neutral	Frequency	Daily
Outlet Country	Malaysia	Outlet Language	English
Impressions	177,922	Circulation	88,961
PR Value	53,377	Page	25

Page Location



The technical and economic hurdles of CCUS

DESPITE the potential, CCUS faces significant technical and economic challenges. Analysts at AmInvestment Bank Bhd (AmInvestment Bank) highlighted that CCUS projects globally struggle with low carbon capture rates and high costs.

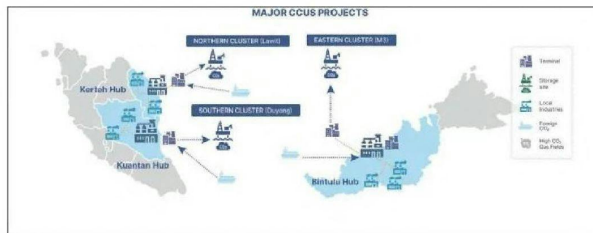
One prominent example is Chevron's Gorgon CCS project in Australia, the world's largest CCS initiative, encountered multiple issues. The global O&G mogul invested over A\$3 billion in the project, aiming to capture four million tonnes of carbon annually – approximately 80 per cent of the total carbon emitted.

However, due to reservoir pressure limitations, it only managed to capture between 30 and 34 per cent.

Furthermore, infrastructure repairs and lower-than-expected carbon capture levels caused costs to escalate from an initial estimate of AUD\$70 per tonne to over A\$200 per tonne, according to the Institute for Energy Economics and Financial Analysis.

AmInvest also highlighted that in Malaysia, only large oil and gas companies currently have the financial capacity to undertake CCUS projects, while other industries face significant barriers due to high capital requirements and the lack of safe storage locations.

Similarly, Kenanga Research



CCUS projects across Malaysia. — Source: Economic Ministry

pointed out that CCUS is not a cost-effective method at this juncture.

It cited the case of Petronas' Kasawari CCS project off Bintulu, which has an annual storage capacity of 3.3 million tonnes, while Malaysia's three CCUS hubs can store a total of 15 million tonnes.

"However, the Petronas Group alone emits over 50 million tonnes annually. According to the International Energy Agency (IEA), even with all current and planned projects, only about 320 million tonnes of carbon dioxide will be stored annually by 2030 – just 8 per cent of global carbon dioxide emissions," it said.

Arup Southeast Asia Energy Lead Nick Ash during the panel discussions titled 'Importance

of CCS CCUS Regulatory Framework' at the CONNECT Energy Borneo 2025 conference held here recently also acknowledged that CCUS has had 'a checkered history.'

"It's been spoken about for decades, with some high-profile projects failing. Where it has worked, it has primarily been for enhanced oil recovery.

"The industry must be honest about its limitations while proving its effectiveness in reducing emissions," he said while stressing that transparency with the public is crucial for gaining acceptance.

"We can't pretend it's a silver bullet for decarbonisation. It needs to be targeted at specific applications where alternatives are limited. The public wants

honest discussions on safety, environmental impact, and job creation," he added.

Meanwhile, environmental watchdog RimbaWatch raised concerns over the recently passed CCUS Bill in a statement dated March 18. It warned that using captured carbon dioxide for fossil fuel extraction, such as sour gas recovery, could ultimately worsen climate impacts.

Although the bill prohibits the use of imported carbon dioxide for this purpose, it does not restrict the use of locally captured carbon dioxide which could pose as a loophole that could enable further fossil fuel extraction.

RimbaWatch also pointed out that CCUS projects carry risks such as carbon dioxide leakage and underperformance.



The CCUS value chain. — Source: Economic Ministry

However, the bill does not include penalties for leaks or failure to capture the promised amount of carbon dioxide.

Looking at other country's model, Ivana Dimitrova, Southeast Asia Regional Lead for Green Energy and Industrial Decarbonisation at the British High Commission in Singapore during the conference explained that the UK adopts a transport and storage model where storage operators are responsible for about 20 to 25 years.

"After that, liability transfers to the government. Norway follows a similar approach with the Northern Lights project. The industry also sets up a fund to cover potential leakage or issues after that period, similar to oil and gas abandonment costs," she

said.

However, Adelina Awaluddin, Head of Low Carbon Solutions Malaysia at ExxonMobil, also highlighted the uncertainty surrounding liability for CCS storage in Malaysia. She noted that the industry is still navigating this space at the national level.

"When we started looking at insuring CCS, there was no existing policy that we knew of. Oftentimes, we apply oil and gas standards, which can be costly," she said.

Nevertheless, Kenanga Research opined that CCUS will continue to play an important role in supporting modern and flexible power systems that remain very much fossil-fuel dependent.